

Table 1. Return of banded burrowing owls to the Kuna Butte study area (1997), reflecting between-year movements.

Band Number	Original Location (Year)	Age When First Observed	Sex	1997 Nest Location	Distance ^a (km)	Breeding Successful in 1997
1204-43751	Kuna Butte #1 (1996)	Adult	Female	EFN ^b #2	1.47	Yes
1204-43764	EFN #1 (1996)	Juvenile	Female	EFN #3	0.16	Yes
1204-43766	Kuna Cave #2 (1996)	Juvenile	Male	K. Butte Gravel #1	3.92	Yes
1204-43767	Sewage Pond #1 (1996)	Adult	Male	Sewage Pond #2	0.06	Yes
614-89605 ^c	Kuna Butte #5 (1996)	Juvenile	Unknown	-----	-----	-----
614-89644	Dairy #2 (1996)	Juvenile	Male	Kuna Butte #6	1.26	Yes

^areflects *breeding dispersal* distance if adult when initially banded, and *natal dispersal* distance if juvenile when first banded.^bEFN = Effluent Field North.

^cdetected at natural burrow on 22 March 1997 approximately 0.55 km from natal burrow; unknown if nesting attempted in 1997.

Table 2. Return of banded burrowing owls to the Grand View study area (1997), reflecting between-year movements.

Band Number	Original Location (Year)	Age When First Observed	Sex	1997 Nest Location	Distance ^a (km)	Breeding Successful in 1997
1204-43777	Trailer #2 (1996)	Juvenile	Male	Trailer #5	0.10	Yes
1204-43778	Well #2 (1996)	Adult	Female	Well #3	0.21	Yes
1204-43779	Well #1 (1996)	Adult	Male	Well #2	0.07	Yes
1204-43780	Trailer #1 (1996)	Adult	Male	Trailer #1	0.00	Yes
1204-43783	Trailer #2 (1996)	Adult	Female	Trailer #1	0.23	Yes
1204-43791	Trailer #1 (1996)	Juvenile	Male	Baja Pole #19	1.24	Yes
614-89656	Sub South #6 (1996)	Juvenile	Male	Baja #3	1.57	Yes
614-89672	Sub East #1	Juvenile	Male	Power-line #2	1.12	Yes
614-89673	Sub South #4 (1996)	Juvenile	Female	Sub East #1	1.52	Yes
614-89678	Trailer #2 (1996)	Juvenile	Female	Power-line #2	1.77	Yes

^areflects *breeding dispersal* distance if adult when initially banded, and *natal dispersal* distance if juvenile when first banded.

Table 3. Pattern of nest burrow (re-) use in the Kuna Butte study area (1994 - 1997). X = burrow used for nesting; (F) = nesting attempt failed and no young fledged; O = burrow not used for nesting, confirmed; NM = burrow not monitored for use during our study; -- = burrow likely not used; * = artificial burrows placed around historical natural burrow; X* = pair nested in artificial burrow at historical site.

Nest Name	1994	1995	1996	1997
Dairy #1	X (F)	O	O	NM
Dairy #2	X	X	X	NM
Dairy #3	X	O	O	NM
Dairy #4	X (F)	O	O	NM
Dairy #5	X (F)	O	O	NM
Dairy #6	X	X	X	NM
Dairy #7	--	--	X (F)	NM
Sewage Pond #1	X	X	X	X*
Sewage Pond #2	--	X	X	X*
Kuna Butte #1a	X (F)	Destroyed	Destroyed	Destroyed
Kuna Butte #1b	--	X	X	X*
Kuna Butte #2	X	X	O	X (F)
Kuna Butte #3	X	O	O	X*
Kuna Butte #4	X (F)	O	O	NM
Kuna Butte #5	X	X	X	O*
Kuna Butte #6	X	X	O	X*
Kuna Butte #7	--	--	X	O*
Effluent Field North #1	--	--	X	X*
Effluent Field South #1	--	--	X	X*
Kuna Cave #1	NM	X	O	O
Kuna Cave #2	NM	X	X	O*
Kunda Cave #3	NM	X	X	O*
Swan Falls 1	X	O	O	O
Swan Falls South	--	X (F)	O	O
Swan Falls #3	--	--	X	O*
Swan Falls #4	--	--	X	X*
J. Hayes	(likely used) ^a	X	X	O*
B. Stewart #1	O	X	X	X*
B. Stewart #2	O	X	X	X*
IBP #1a	X (F)	O	O	NM
IBP #1b	--	X	O	NM
IBP #2	X	X	X	NM
Indian Creek S.	--	X	O	NM
Indian Creek W.	NM	X	O	NM

Table 3 continued

Nest Name	1994	1995	1996	1997
IAP #1	--	X	O	NM
IAP #2	NM	X	O	NM
Beig #1	NM	NM	NM	X*
Poen #1	NM	NM	NM	X
Honeybee #1	NM	NM	NM	X (F)

^afree-flying juveniles observed in vicinity of burrow but nesting in burrow not confirmed.

Table 4. Pattern of nest burrow (re-) use in the Grand View study area (1996- 1997). X = burrow used for nesting; (F) = nesting attempt failed and no young fledged; 0 = burrow not used for nesting, confirmed; NM = burrow not monitored for use during our study; -- = burrow likely not used; * = artificial burrows placed around historical natural burrow; X* = pair nested in artificial burrow at historical site.

Nest Name	1996	1997		
Trailer #1	X	X*		
Trailer #2	X	X*		
Trailer #3	X	Destroyed		
Trailer #4	NM	X*		
Trailer #5	--	X		
Well #1	X	O*		
Well #2	X	X*		
Baha #1	X	X*		
Baha #5	NM	X		
Trailer View #1	X	X*		
Trailer View #4	--	X		
Grand View #2	X	O*		
Grand View #3	O	O*		
Grand View #19	X	X*		
Substation South #1	X	X*		
Substation South #2	X	X*		
Substation South #4	X	O*		
Substation #5	O	X*		
Substation #6	X	X*		
Substation #7	--	O*		
Substation South #8	--	X (F)		
Substation East #1	X	X*		
Substation East #2	--	X		
C.J. Strike Dam #1	NM	X		
97-1	NM	X		
97-2	NM	X (F)		
97-3	NM	X		

Table 5. Occupied nest name, identity of breeding adults, and number of nestlings or fledglings banded and observed in the Kuna Butte and Grand View study areas during the 1997 breeding period. Unless otherwise indicated, adults were initially banded in 1997. Dashes (--) indicate breeding owls that remained unbanded. Question Marks (?) indicate unknown numbers of young for a nest.

Nest Name	Burrow Type	Adult Male	Adult Female	#Young Banded (observed)
<i>Kuna Butte Study Area</i>				
Sewage Pond #1	Artificial	--	614-89701	10 (10)
Sewage Pond #2	Artificial	1204-43767 ^a	614-89705	3 (3)
Kuna Butte #1b	Artificial	--	614-89722	4 (4)
Kuna Butte #3	Artificial	--	614-52150	1 (2)
Kuna Butte #6	Artificial	614-89644 ^b	1204-57010	1 (?)
Kuna Butte Gravel #1	Artificial	1204-43766 ^c	614-89723	4 (4)
Kuna Butte Ag. #1	Artificial	614-89725	614-52149	8 (8)
Kuna Cave Satellite #1	Artificial	--	614-52148	7 (7)
Effluent Field North #1	Artificial	--	614-89708	9 (9)
Effluent Field North #2	Artificial	614-89724	1204-43751 ^d	9 (9)
Effluent Field North #3	Natural	--	1204-43764 ^e	1 (?)
Effluent Field South #1	Artificial	614-89726	614-89704	8 (8)
Effluent Field South #2	Artificial	Unk. Band ^f	614-89706	10 (10)
Swan Falls #4	Artificial	--	614-89696	10 (10)
Swan Falls #6	Natural	--	614-52279	4 (6)
Swan Falls #7	Natural	--	--	1 (?)
Swan Falls #8	Natural	--	1204-59409	1 (5)
Prison #1	Artificial	--	614-89707	7 (7)
Prison #2	Artificial	--	614-89727	2 (2)
Poen #1	Natural	--	--	1 (?)
Beig #1	Artificial	--	--	7 (7)
B. Stewart #1	Artificial	614-89793	614-89702	9 (9)
B. Stewart #2	Artificial	--	614-89703	4 (4)
B. Stewart #3	Natural	--	1204-57041	2 (?)
<i>Grand View Study Area</i>				
Trailer #1	Artificial	1204-43780 ^g	1204-43783 ^h	10 (10)
Trailer #2	Artificial	--	614-89693	5 (5)
Trailer #4	Artificial	--	614-52152	11 (11)
Trailer #5	Natural	1204-43777 ⁱ	614-52292	4 (5)
Well #2	Artificial	1204-43779 ^j	614-52222	11 (11)
Well #3	Artificial	--	1204-43778 ^k	11 (11)
Baha #1	Artificial	--	614-89692	8 (8)

Table 5. Continued.

Nest Name	Burrow Type	Adult Male	Adult Female	#Young Banded (observed)
Baha #3	Artificial	614-89656 ^l	614-89695	6 (6)
Baha #5	Natural	--	--	4 (6)
Trailer View #1	Artificial	--	614-52147	7 (7)
Trailer View #4	Natural	--	--	0 (>1)
Grand View #19	Artificial	--	614-89694	5 (5)
Substation South #1	Artificial	--	614-52164	7 (7)
Substation South #2	Artificial	--	--	11 (11)
Substation South #5	Artificial	--	--	7 (7)
Substation South #6	Artificial	1204-59405	614-52151	6 (6)
Substation South #8	Natural	614-89690	614-52277	0 (0)
Substation East #1	Artificial	--	614-89673 ^m	8 (8)
Substation East #2	Natural	--	614-52257	3 (?)
Powerline #2	Artificial	614-89672 ⁿ	614-89678 ^o	3 (3)
Powerline #3	Artificial	--	614-52195	2 (2)
Powerline #5	Artificial	614-52298	614-52244	2 (2)
Baja Pole #19	Artificial	1204-43791 ^p	614-89691	7 (7)
C.J. Strike Dam #1	Natural	--	614-89687	1 (?)
97-1	Natural	--	614-52278	4 (6)
97-2	Natural	--	614-89688	0 (?)
97-3	Natural	--	614-89698	0 (?)

^abanded as breeding male at Sewage Pond #1 in 1996.

^bbanded as nestling at Dairy #2 in 1996.

^cbanded as nestling at Kuna Cave #2 in 1996.

^dbanded as breeding female at Kuna Butte #1 in 1996.

^ebanded as nestling at Effluent Field North #1 nest in 1996.

^funidentified because lacking color bands and did not capture in 1997.

^gbanded as breeding male at same nest in 1996.

^hbanded as breeding female at Trailer #2 nest in 1996.

ⁱbanded as nestling at Trailer #2 nest in 1996.

^jbanded as breeding male at Well #1 nest in 1996.

^kbanded as breeding female at Well #2 nest in 1996.

^lbanded as nestling at Substation South #2 nest in 1996.

^mbanded as nestling at Substation South #4 nest in 1996.

ⁿbanded as nestling at Substation East #1 nest in 1996.

^obanded as nestling at Trailer #2 nest in 1996.

^pbanded as nestling at Trailer #1 nest in 1996.

Table 6. Occupancy of artificial burrow clusters of 3 placed around natural nest burrows used in either 1995 or 1996 and patterns of chamber size selection for each occupied nest burrow. An asterisk (*) indicates the minimum number of eggs possible as some nests were not checked until hatching began.

Nest Name	Occupied	Chamber Size Used	# Eggs Laid(# Fledged ^a)
<i>Kuna Butte Study Area</i>			
Sewage Pond #1	Yes	Large	11* (8)
Sewage Pond #2	Yes	Medium	9* (3) ^b
Kuna Butte #1b	Yes	Large	8 (3)
Kuna Butte #5	No	--	--
Kuna Butte #7	No	--	--
Effluent Field North #1	Yes	Large	9 (8)
Effluent Field South #1	Yes	Large	9 (8)
Kuna Cave #2	No	--	--
Kuna Cave #3	No	--	--
Swan Falls #3	No	--	--
Swan Falls #4	Yes	Large	11 (10)
Prison #1	Yes	Large	7 (7)
J. Hayes #1	No	--	--
J. Hayes #2	No	--	--
J. Hayes #3	No	--	--
B. Stewart #1	Yes	Medium ^c	9 (8)
B. Stewart #2	Yes	Small ^d	8 (4)
<i>Grand View Study Area</i>			
Trailer #1	Yes	Large	10 (5)
Trailer #2	Yes	Large	10* (5)
Trailer #4	Yes	Large	12* (8)
Well #1	No	--	--
Well #2	Yes	Large	11 (5)
Baha #1	Yes	Small	9* (4)
Substation East #1	Yes	Large	8* (8)
Trailer View #1	Yes	Medium	8* (7)
Grand View #2	No	--	--
Grand View #3	No	--	--
Grand View #19	Yes	Large	10 (3)
Substation South #1	Yes	Large	10 (7)
Substation South #2	Yes	Large	11* (6)
Substation South #4	No	--	--

Table 6 continued

Nest Name	Occupied	Chamber Size Used	# Eggs Laid(# Fledged ^a)
<i>Grand View Study Area</i>			
Substation South #5	Yes	Large	12* (6)
Substation South #6	Yes	Large	9 (4)
Substation South #7	No	--	--

^ajuvenile burrowing owls considered fledged at 28 d old.

^bsix eggs did not hatch.

^clarge chamber collapsed prior to nest site selection because of trampling by cattle.

^dlarge chamber and tunnel to medium chamber collapsed prior to nest site selection because of trampling by cattle.

Table 7. Occupancy of artificial burrow clusters of 2 placed in suitable burrowing habitat and patterns of tunnel diameter selection for each occupied nest burrow.

Nest Name	Occupied	Tunnel Diameter Used	# Eggs Laid(# Fledged ^a)
<i>Kuna Butte Study Area</i>			
Kuna Butte Gravel #1	Yes	10 cm	9 (4)
Kuna Butte Gravel #2	No	--	--
Effluent Field North #2	Yes	10 cm	9 (9)
Effluent Field South #2	Yes	15 cm	10 (7)
Kuna Cave Satellite #1	Yes	10 cm	8 (7)
Kuna Cave Satellite #2	No	--	--
Kuna Butte Ag #1	Yes	15 cm	10 (8)
Swan Falls Satellite #5	No	--	--
Prison #2	Yes	15 cm	9 (2) ^b
Prison #3	No	--	--
<i>Grand View Study Area</i>			
Powerline #1	No	--	--
Powerline #2	Yes	10 cm	9 (2)
Powerline #3	Yes	10 cm	11 (2)
Powerline #4	No	--	--
Powerline #5	Yes	10 cm	8 (2)
Substation Southeast #1	No	--	--
Baha Pole #19	Yes	10 cm	9 (7)
Trailer View #2	No	--	--
Trailer View #3	No	--	--
Well #3	Yes	15 cm	11 (11)
Baha #2	No	--	--
Baha #3	Yes	10 cm	10 (6)
Baha #4	No	--	--
Backyard #1	No	--	--

^ajuvenile burrowing owls considered fledged at 28 d old.

^badult male was killed by red-tailed hawk (*Buteo jamaicensis*) two days after last egg hatched; two young survived to fledge out of nine eggs laid.